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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
CHOU, ALBERT T	
ART UNIT	PAPER NUMBER
2416	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/584,078	MANZALINI ET AL.	
	Examiner	Art Unit	
	ALBERT T. CHOU	2416	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 April 2009 for the amendment*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *23-44* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *23-44* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. Applicants' Amendments filed on April 10, 2009 have been entered. Claims 33 and 34 have been amended. No claims have been added or cancelled. Claims 23-44 are pending in this application, with claims 23 and 33 being independent.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 23, 33 and 42-44 are rejected under 35 U.S.C. 102(e) as being anticipated by US Patent No. 7,289,437 to Chiruvolu.

Regarding claim 23, Chiruvolu teaches a method of managing traffic in an optical network **[Fig. 1]**, comprising:

tagging a first portion of traffic in ingress to at least one node of said network as high priority traffic **[Fig. 1; col. 3, lines 45-55]** and a second portion of traffic in ingress to said at least one node as low priority traffic **[Fig. 1; col. 3, lines 45-55]**;

configuring at least a portion of said network so that a first portion of switched circuits exiting from said at least one node is adapted to carry said high priority traffic **[Figs. 1-3 & 4, steps 400-418; col. 3, lines 45-55, col. 5, lines 8-55]** and a second portion of switched circuits exiting from said at least one node is adapted to carry said low priority traffic **[Figs. 1-3 & 5, steps 500-506; col. 3, lines 45-55, col. 5, line 61 – col. 6, line 14]**;

detecting a burst of said high priority traffic **[Fig. 4, step 400; col. 5, lines 8-13]**; after said step of detecting said burst, acting on at least a portion of said low priority traffic, so as to deplete at least one interface of said at least one node, connected to at least one switched circuit of said second portion of switched circuits **[Fig. 4, steps 404-408; col. 5, lines 16-29]**;

tearing down at least one switched circuit connected to said at least one depleted node interface **[Fig. 4, steps 404-406; Fig. 6, steps 616-620; col. 5, lines 16-29, col. 7, lines 4-12]**;

setting up at least one new temporary switched circuit starting from said at least one depleted node interface **[Fig. 4, steps 404-408; col. 5, lines 16-29]**; and

forwarding a portion of said high priority traffic to said at least one depleted node interface, and, thereby, to said new temporary switched circuit **[Fig. 4, steps 404-408; col. 5, lines 16-29]**.

Regarding claim 33, Chiruvolu teaches an optical network **[Fig. 1]** comprising:

at least one node comprising a router **[Fig. 1; MPLS edge nodes 102a-102c; col. 3, lines 32-35]** adapted to tag a first portion of traffic in ingress thereof as high priority traffic **[Fig. 1; col. 3, lines 45-55]** and a second portion of traffic in ingress thereof as low priority traffic **[Fig. 1; col. 3, lines 45-55]**;

at least one network controller **[Fig. 1; the control or resource management function of MPLS edge nodes 102a-102c; col. 3, lines 45-55; col. 4, lines 13-17, col. 7, line 64 – col. 8, line 4]** adapted to configure at least a portion of said network in order to have a first portion of switched circuits exiting from said at least one node adapted to carry said high priority traffic **[Figs. 1-3 & 4, steps 400-418; col. 3, lines 45-55, col. 5, lines 8-55]** and a second portion of switched circuits exiting from said at least one node adapted to carry said low priority traffic **[Figs. 1-3 & 5, steps 500-506; col. 3, lines 45-55, col. 5, line 61 – col. 6, line 14]**;

said network controller also comprising a traffic controller **[Figs. 1 & 6; the control or resource management function of MPLS edge nodes 102a-102c; col. 3, lines 45-55; col. 4, lines 13-17, col. 6, lines 15-19]** adapted to detect a burst of said high priority traffic and to thereby send a first warning signal **[e.g. Fig. 6, steps 600-604; col. 6, lines 19-32, or, Fig. 4, step 400; col. 5, lines 8-13]]**;

said router also being adapted to act on at least a portion of said low priority traffic in case of receipt of said first warning signal, so as to deplete at least one node interface, connected to at least one switched circuit of said second portion of switched circuits **[Fig. 4, steps 404-408; col. 5, lines 16-29, or. Fig. 5, steps 504-510; col. 6, lines 1-14]**;

said network controller also being adapted to tear down at least one switched circuit connected to said depleted node interface, in case of receipt of said first warning signal **[Fig. 4, steps 404-406; Fig. 6, steps 616-620; col. 5, lines 16-29, col. 7, lines 4-12]**;

said network controller also being adapted to set up at least one new temporary switched circuit starting from said at least one depleted node interface **[Fig. 4, steps 404-408; col. 5, lines 16-29]**; and

said router also being adapted to forward a portion of said high priority traffic to said at least one depleted node Interface, and, thereby, to said new temporary switched circuit **[Fig. 4, steps 404-408; col. 5, lines 16-29]**.

Regarding claim 42, Chiruvolu teaches the optical network, wherein said at least one node comprises switching equipment **[Fig. 1; MPLS edge nodes 102a-102c; col. 3, lines 32-35]**.

Regarding claim 43, Chiruvolu teaches the optical network, wherein said switching equipment comprises a digital cross connect, or an optical cross connect, or an add/drop multiplexer, or a fiber switch **[Fig. 1; optical cross-connects 104a-104c; col. 3, lines 32-35]**.

Regarding claim 44, Chiruvolu teaches the optical network comprising optical fibers connected to said switching equipment **[Fig. 1; fiber links; col. 3, lines 32-35, col. 4, lines 49-54]**.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 24-32 and 34-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 7,289,437 to Chiruvolu in view of US Patent Application Pub. No. 2002/0176389 A1 by Porikli et al. (hereinafter "Porikli")

Regarding claims 24 and 34, Chiruvolu teaches each limitation set forth in their respective parent claims. Chiruvolu further teaches comparing a first bandwidth with a first predetermined threshold **[e.g. Fig. 4, step 400; determining sufficient capacity on existing direct LC for a HP request; col. 5, lines 9-13, or, Fig. 6, step 600; comparing the utilization with an upper or lower threshold, i.e. 80% or 20%; col. 6, lines 22-24, col. 7, lines 33-35]**.

However, Chiruvolu does not expressly teach estimating a first bandwidth of said high priority traffic in a first predetermined time.

Porikli teaches a method/system which dynamically allocates and renegotiate bandwidth to traffic having a variable data rate in the network **[Abstract]**. Porikli teaches estimating a first bandwidth of said high priority traffic in a first predetermined time interval **[Fig. 6; determine an optimum bandwidth allocation a(n+1) for real-time traffic at a future time n+1 given a current traffic bit arrival rate r(n), and current allocated bandwidth a(n) at time n using Least Mean Square Prediction Module 612; para. 0008, 0030-0031, 0047-0048]**.

It would have been obvious to a person of ordinary skill in the art at the time of the invention was made to implement a well-known adaptive predicative scheme, such as a Least Mean Square (LMS) algorithm, not only for monitoring the current high priority traffic but also predicating the high priority traffic in the future time interval in Chiruvolu's GMPLS network.

The motivation for combining the reference teachings would be to enable Chiruvolu's system to predict, configure and thus adapt to the changing traffic demands for optimal resource utilization so that the objective of dynamically establishing and tearing down optical channels in GMPLS optical networks can be achieved.

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Regarding claims 25 and 35, Chiruvolu, in view of Porikli, teaches said step of acting on at least a portion of low priority traffic is carried out if said first bandwidth exceeds said first predetermined threshold **[Chiruvolu: Fig. 4, steps 404-408; col. 5, lines 16-29, or, Fig. 6, steps 602-604; col. 6, lines 25-32]**.

Regarding claims 27 and 37, Chiruvolu, in view of Porikli, teaches detecting an end of a burst of said high priority traffic **[Chiruvolu: Fig. 6, step 606 or 610; low threshold; col. 6, lines 37-58]** and thereby sending a second warning signal **[Chiruvolu: Fig. 6, steps 608-609; col. 6, lines 40-54]**.

Regarding claims 28 and 38, see rejection to claim 24 and Fig. 6 of Porikli for repeatedly executing the LMS prediction algorithm when a subsequent HP request is received **[Porikli: para. 0008, 0030-0031, 0047-0048]**

Regarding claims 30 and 40, Chiruvolu, in view of Porikli, teaches said first threshold is higher than or equal to said second threshold **[Chiruvolu: Fig. 6; e.g. 80% and 205; col. 7, lines 33-35]**.

Regarding claims 31 and 41, Chiruvolu, in view of Porikli, teaches after said step of detecting said end of burst, acting on said forwarded portion of said high priority traffic so as to route said forwarded portion toward at least one switched circuit of said first portion of switched circuits **[Chiruvolu: Fig. 6, steps 608-609; i.e. unset the flag and update the Preferred Hop table entries so as to route the traffic based on the updated table entries; col. 6, lines 40-54]**;

tearing down said at least one new temporary switched circuit **[Chiruvolu: Fig. 4, steps 404-406; Fig. 6, steps 616-620; col. 5, lines 16-29, col. 7, lines 4-12]**; and

restoring said at least one torn down switched circuit of said second portion of switched circuits **[Chiruvolu: Fig. 4, step 412; create a new direct LC; col. 5, lines 41-46]**.

Regarding claim 32, Chiruvolu, in view of Porikli, teaches said step of acting on said forwarded portion of said high priority traffic is carried out if said second predetermined threshold exceeds said second bandwidth **[Chiruvolu: Fig. 6, step 606; e.g. the utilization exceeds the lower threshold but lower than the upper threshold; col. 6, lines 40-54]**.

Response to Remarks

4. In light of Applicants' remarks, the rejections to claims 26, 29, 36 and 39 under 35 U.S.C. 112, 2nd paragraph have been withdrawn.

5. In light of Applicants' amendment, the rejections to claims 34-42 under 35 U.S.C. 112, 2nd paragraph have been withdrawn.

6. Applicant's' remarks and amendments filed on April 10, 2009 regarding the rejections of claims 23, 33 and their dependent claims 24-32 and 34-44, respectively, in the application have been fully considered but they are not persuasive.

Rejection of claims 23, 33 and 42-44 under 35 U.S.C. 102(e)

Applicants argue that Chiruvolu does not disclose or suggest at least Applicants' claimed *"tearing down at least one switched circuit connected to said at least one depleted node interface"* and *"setting up at least one new temporary switched circuit starting from said at least one depleted node interface,"* as recited in independent claim 23. Examiner respectfully disagrees.

Specifically, Applicants argue that *instead of "tearing down" an LP traffic LC and "setting up" a "new temporary" LC for forwarding RP traffic, Chiruvolu's method "reroutes" LP traffic from a direct LC to a multi-hop LC in order to make the existing direct LC available to HP traffic.* Examiner respectfully disagrees to applicant's interpretation with respect to Chiruvolu's teachings.

As shown in Fig. 4, step 400, Chiruvolu teaches that a determination is made whether capacity exists on a direct LC between the designated ingress/egress node pair **[col. 5, lines 12-13]**. If the capacity on a direct LC between the designated ingress/egress node pair is not sufficient, a determination, Fig. 4, step 404, is made whether a victim LP traffic trunk on the direct LC between the ingress/egress node pair is available for rerouting to another LC **[col. 5, lines 17-19]**. If an eligible victim LP traffic trunk is found, execution proceeds to Fig. 4, step 406, in which the victim LP traffic is rerouted to a multi-hop LC **[col. 5, lines 22-25]**.

However, in order to reroute the LP traffic to a multi-hop LC, it is clear that the LP trunk must be torn down first, namely, *"tearing down at least one switched circuit connected to said at least one depleted node interface",* and then the LP traffic, which

previously carried by the LP trunk, may be rerouted to the multi-hop LC **[LCs are torn down when they are underutilized, or, another example as shown in Fig. 4, steps 400-404, when more capacity on existing direct LC (for the high priority traffic) is needed, thereby freeing up the relevant optical resources; col. 2, lines 42-49]**. Furthermore, Applicants' argument, "*Chiruvolu discloses a tearing-down process (Fig. 6, steps 616-620 and col. 7, ll. 4-12)… is completely different from Applicants' claimed tearing down*", is completely irrelevant, since Chiruvolu, col. 2, lines 42-49, teaches the same tear-down procedure as set forth in claim 1.

Chiruvolu further teaches, Fig. 4, step 408, once the LP traffic was torn down and the LP traffic was rerouted, the HP traffic trunk is mapped on to the direct LC on to which the victim LP traffic trunk was previously mapped, namely, *"setting up at least one new temporary switched circuit starting from said at least one depleted node interface."* **[LCs are torn down, thereby freeing up the relevant optical resources, and new LC (i.e. for the high priority traffic) are established responsive to incoming traffic demands; col. 2, lines 42-49]**.

Accordingly, Chiruvolu teaches each limitation set forth in claim 23, and claim 23 is not allowable over Chiruvolu's teachings.

Independent claim 33, while of different scope, contains similar recitations as independent claim 23, and is rejected one the same ground of rejection as to the independent claim 23.

Claims 42-44 directly or indirectly depend from claim 33. In addition to the reasons of rejection to the independent claim 33, Examiner maintains the same position of rejection to each of dependent claims 42-44. Accordingly, claims 42-44 are not allowable over Chiruvolu's teachings.

Rejection of Claims 24-32 and 34-41under 35 U.S.C. 103(a)

Applicants argue that no prima facie case of obviousness has been established with respect to claims 24-32 and 34-41 for at least the reason that Chiruvolu and Porikli, taken alone or in combination, do not teach or suggest each and every claim element. Examiner respectfully disagrees.

In addition to the same argument to the independent claims 23 and 33 (see ***Examiner's Response to Remarks*** to claims 23 and 33), Applicants argue that Porikli does not cure the deficiencies of Chiruvolu. Examiner respectfully disagrees to Applicants' interpretation with respect to Chiruvolu's and Porikli's combining teachings.

Since the reasons of rejection are clear and sufficient, Examiner maintains the same position of rejection to each of dependent claims 24-32 and 34-41 as recited under Claim Rejections – 35 U.S.C. 103(a). Accordingly, claims 24-32 and 34-41 are not allowable over Chiruvolu's and Porikli's combining teachings.

It is concluded that Chiruvolu's reference in its entirety does anticipate independent claims 23, 33, and dependent claims 42-44. Chiruvolu's reference, in combination with Porikli's reference, continues to read claims 24-32 and 34-41 through obviousness. Therefore, claims 23-44 are not allowable over these references.

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Albert T. Chou whose telephone number is 571-272-6045. The examiner can normally be reached on 8:30 - 17:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chi H. Pham, can be reached on 571-272-3179. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Albert T Chou/
Examiner, Art Unit 2416
June 1, 2009